CLAIMS

1. A radio communication apparatus comprising:

transmission rate switching means for switching a transmission rate of a transmission signal based on reception quality information from the other end of communication; and

transmission means for transmitting a transmission signal at the switched transmission rate.

2. The radio communication apparatus according to claim 1, wherein the transmission rate switching means selects a 1/2 transmission rate when the reception quality measurement result of the reception quality information is smaller than a first threshold.

3. The radio communication apparatus according to claim 1, wherein the transmission rate switching means selects a transmission rate at which the reception quality measurement result becomes greater than the first threshold when the reception quality measurement result of the reception quality information is smaller than the first threshold.

4. The radio communication apparatus according to claim 3, wherein the transmission rate switching means selects a double transmission rate when the reception quality measurement result is greater than a second threshold which is greater than said first threshold.

5. The radio communication apparatus according to claim 1, wherein the transmission rate switching means selects a transmission rate that meets the reception

quality of the reception quality measurement result in the reception quality information and at the same time allows the fastest transmission.

6. A radio communication apparatus comprising:

reception quality estimation means for estimating the reception quality of the other end of communication based on transmission power control information of said other end of communication;

transmission rate switching means for switching the transmission rate of a transmission signal based on this reception quality estimation result; and

transmission means for transmitting the transmission signal at the switched transmission rate.

7. The radio communication apparatus according to claim 6, wherein the reception quality estimation means estimates the reception quality by accumulating the transmission power control information and the transmission rate switching means selects a 1/2 transmission rate when the reception quality estimation result is smaller than a threshold.

8. The radio communication apparatus according to claim 6, wherein the reception quality estimation means estimates the reception quality by accumulating the transmission power control information and the transmission rate switching means selects a transmission rate at which the reception quality becomes greater than the first threshold when the reception quality estimation result is smaller than the first threshold.

9. The radio communication apparatus according to claim 8, wherein the reception quality estimation means estimates the reception quality by accumulating the transmission power control signal and the transmission rate switching means selects a double transmission rate when the reception quality estimation result is greater than a second threshold which is greater than the first threshold.

10. The radio communication apparatus according to claim 6, wherein the reception quality estimation means estimates the reception quality by accumulating the transmission power control signal and the transmission rate switching means selects a transmission rate that meets the reception quality of the reception quality estimation result and at the same time allows the fastest transmission.

11. A radio communication apparatus comprising:

transmission rate switching means for switching a transmission rate of a transmission signal based on transmission power control information from the other end of communication; and

transmission means for transmitting the transmission signal at the switched transmission rate.

12. The radio communication apparatus according to claim 11, wherein the transmission rate switching means selects a 1/2 transmission rate when the transmission power in the transmission power control information is greater than a threshold.

13. The radio communication apparatus according to claim 11, wherein the transmission rate switching means selects a transmission rate at which the transmission power becomes smaller than a first threshold when the transmission power in the transmission power control information is greater than the first threshold.

14. The radio communication apparatus according to claim 13, wherein the transmission rate switching means selects a double transmission rate when the transmission power is smaller than a second threshold which is smaller than said first threshold.

15. The radio communication apparatus according to claim 11, wherein the transmission rate switching means switches the transmission rate so that the transmission power in the transmission power control information is within a predetermined range.

16. The radio communication apparatus according to claim 2, wherein the threshold is set according to the transmission rate in communication.

17. The radio communication apparatus according to claim 2, using a CDMA communication system and setting a threshold according to the spreading factor.

18. The radio communication apparatus according to claim 2, using a CDMA communication system and setting a threshold according to the number of multiplexing codes.

19. A radio communication system comprising:

a first radio communication apparatus comprising

reception quality measuring means for measuring reception quality and transmission means for transmitting information including this reception quality; and

a second radio communication apparatus comprising transmission rate switching means for switching a transmission rate based on said reception quality.

20. The radio communication system according to claim 19, wherein the second radio communication apparatus comprises transmission power control means for controlling the transmission power of the first radio communication apparatus based on the reception quality measurement result.

21. The radio communication system according to claim 20, wherein the first radio communication apparatus comprises reception quality estimation means for estimating the reception quality of said other end of communication based on the transmission power control information from the second radio communication apparatus.

22. The radio communication system according to claim 19, wherein the first radio communication apparatus transmits information to the second radio communication apparatus all the time.

23. The radio communication system according to claim 19, wherein the first radio communication apparatus transmits information to the second radio communication apparatus only when required.

24. The radio communication system according to claim 23, wherein the second radio communication apparatus switches the transmission rate when the reception quality measured by the first radio communication apparatus deteriorates.

25. The radio communication system according to claim 23, wherein, when the reception quality of the second radio communication apparatus deteriorates, the second radio communication apparatus requests the first radio communication apparatus to send information including the reception quality.

26. The radio communication system according to claim 23, wherein the first radio communication apparatus requests the second radio communication apparatus to resend the information including the reception quality when the reception signal contains an error and the second radio communication apparatus, upon reception of the resend request, requests the first radio communication apparatus to send the information including the reception quality.

27. The radio communication system according to claim 19, wherein the transmission rate switching means switches the transmission rate when the transmission rate switching means receives a report that the transmission power is excessive from the second radio communication apparatus.

28. A transmission rate control method comprising the steps of:

comparing allowable transmission power set in a first layer with average transmission power obtained in a second layer, which is lower than said first layer;

indicating a change or no change in a transmission rate in said second layer according to said comparison result; and

changing the transmission rate in a third layer which is higher than said second layer and lower than said first layer according to a change or no change in said transmission rate.

29. The transmission rate control method according to claim 28, wherein said first layer is instructed to lower the transmission rate when said average transmission power is greater than said allowable transmission power.

30. The transmission rate control method according to claim 28, wherein said first layer is instructed to increase the transmission rate when said average transmission power is smaller than said allowable transmission power by a predetermined amount or more.

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